

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY)
THE OIL CONSERVATION DIVISION FOR THE)
PURPOSE OF CONSIDERING:)
)
APPLICATION OF MARBOB ENERGY CORPORATION) CASE NOS. 13,349
FOR AUTHORIZATION OF UNORTHODOX WELL)
LOCATIONS WITHIN ITS DODD FEDERAL UNIT,)
EDDY COUNTY, NEW MEXICO)
)
APPLICATION OF MARBOB ENERGY CORPORATION) and 13,350
FOR STATUTORY UNITIZATION OF THE DODD)
FEDERAL UNIT AREA, EDDY COUNTY,)
NEW MEXICO)
) (Consolidated)

ORIGINAL

REPORTER'S TRANSCRIPT OF PROCEEDINGS

EXAMINER HEARING

BEFORE: DAVID R. CATANACH, Hearing Examiner

October 7th, 2004

Santa Fe, New Mexico

This matter came on for hearing before the New Mexico Oil Conservation Division, DAVID R. CATANACH, Hearing Examiner, on Thursday, October 7th, 2004, at the New Mexico Energy, Minerals and Natural Resources Department, 1220 South Saint Francis Drive, Room 102, Santa Fe, New Mexico, Steven T. Brenner, Certified Court Reporter No. 7 for the State of New Mexico.

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I N D E X

October 7th, 2004
Examiner Hearing
CASE NO. 13,349 and 13,350 (Consolidated)

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A P P E A R A N C E S

FOR THE APPLICANT:

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 By: WILLIAM F. CARR

* * *

STEVEN T. BRENNER, CCR
 (505) 989-9317

1 WHEREUPON, the following proceedings were had at
2 8:19 a.m.:

3 EXAMINER CATANACH: At this time I'll call Case
4 13,349, which is the Application of Marbob Energy
5 Corporation for authorization of unorthodox well locations
6 within its Dodd Federal Unit, Eddy County, New Mexico.

7 Call for appearances.

8 MR. CARR: May it please the Examiner, my name is
9 William F. Carr with the Santa Fe office of Holland and
10 Hart, L.L.P. We represent Marbob Energy Corporation in
11 this matter, and I have witnesses.

12 I would also request at this time that the
13 Examiner call Case 13,350, which is an Application of
14 Marbob Energy Corporation for statutory unitization. They
15 involve the same issues, and it will facilitate the
16 presentation of the cases if they are consolidated.

17 EXAMINER CATANACH: Okay, Mr. Carr, I will call
18 Case 13,350, the Application of Marbob Energy Corporation
19 for statutory unitization of the Dodd Federal Unit area,
20 Eddy County, New Mexico.

21 At this time I'll call for additional appearances
22 in Case Number 13,349 or 13,350.

23 No additional appearances.

24 May I get the witness to stand and be sworn in?

25 (Thereupon, the witness was sworn.)

1 MR. CARR: Mr. Examiner, at the outset I would
2 like to point out that with this case we are not seeking
3 approval of a waterflood project. The area that is the
4 subject of the statutory unitization case currently
5 contains a number of lease waterflood projects. The
6 purpose here is to unitize the area so that we can develop
7 this entire area under a unit plan and use the surface to
8 locate common facilities.

9 Since there currently are waterflood operations
10 going on within the unit area, the project will not qualify
11 for the incentive tax rate, and therefore that is not
12 included in this case.

13 We are offsetting, as you will see, another unit
14 which is being operated under virtually an identical plan
15 to what we're seeking here today. It is also operated by
16 Marbob. And so what we're asking in this case is for
17 authority to operate the Dodd Federal Unit as we are
18 currently operating the Burch-Keely Unit.

19 EXAMINER CATANACH: Okay.

20 RAYE P. MILLER,
21 the witness herein, after having been first duly sworn upon
22 his oath, was examined and testified as follows:

23 DIRECT EXAMINATION

24 BY MR. CARR:

25 Q. Would you state your name for the record, please?

1 A. Yes, my name is Raye Paul Miller.

2 Q. Mr. Miller, where do you reside?

3 A. Artesia, New Mexico.

4 Q. By whom are you employed?

5 A. Marbob Energy Corporation.

6 Q. And what is your current position with Marbob?

7 A. My title is actually secretary/treasurer, I'm a
8 corporate officer, I'm also on the board.

9 Q. Could you describe for us day to day what your
10 responsibilities are with Marbob?

11 A. I actually am more of the office manager. I wind
12 up having responsibility over land, geology, engineering,
13 accounting, gas marketing and oil marketing.

14 Q. And in Marbob, your land people, your geologists
15 and your engineers report to you?

16 A. Yes, sir, we're a small company.

17 Q. Are you familiar with the Applications filed in
18 this case?

19 A. Yes, sir, I am.

20 Q. Are you familiar with the status of the lands
21 involved in the proposed Dodd Federal Unit area?

22 A. Yes, I am.

23 Q. Have you participated with the Marbob land
24 people, geologists, engineers, in developing the technical
25 support for this Application?

1 A. Yes, I have.

2 Q. When you were previously qualified, were you
3 qualified as a practical oilman?

4 A. Yes, sir.

5 MR. CARR: May it please the Examiner, are the
6 witness's qualifications acceptable?

7 EXAMINER CATANACH: Mr. Miller is so qualified.

8 Q. (By Mr. Carr) Would you briefly state what it is
9 that Marbob seeks in this case?

10 A. In the two cases we actually seek to have
11 statutory unitization of the proposed 2400-acre unit, and
12 also we ask for an order that would authorize the drilling
13 of additional wells in the unit area at unorthodox
14 locations, with the requirements that they be at least 330
15 feet from the outer boundary of the unit and 25 feet from
16 the quarter-quarter interior lines.

17 Q. And Mr. Miller, as I stated, Marbob is not
18 seeking approval of a waterflood project?

19 A. No, sir, we are not.

20 Q. You are currently conducting waterflood
21 operations pursuant to Division authority within the area
22 that's the subject of this case?

23 A. Yes, and we'll see those injection wells on a map
24 in the later testimony.

25 Q. Why is Marbob seeking the unit?

1 A. We believe that actually it would make for more
2 efficient operations. We believe that all the owners in
3 the unit should share in production. It allows us to also
4 utilize the surface for common facilities and will allow
5 us, we believe, to recover more oil ultimately out of the
6 area.

7 Q. Would you refer to what has been marked as Marbob
8 Exhibit Number 1 and explain to the Examiner what it is
9 that it shows?

10 A. This is a Midland map of Township 17 South, Range
11 29 East. The orange outline is actually the proposed Dodd
12 Unit. As you can see the colors -- and I hope you're not
13 color-blind -- the blue is the Burch-Keely Unit operated by
14 marbob, the yellow is the Square Lake 12 Unit operated by
15 Webb Oil, the green is actually the Grayburg-Jackson West
16 Co-op Unit operated by Mack Energy.

17 Now, there is an additional unit that borders us
18 on the south, and if you look at the very south of the
19 orange outline, you'll see a unit outline there in Section
20 27, 34 and 35, and that's the Robinson-Jackson Unit
21 operated by Vintage Drilling Company.

22 Q. Mr. Miller, the Burch-Keely Unit was a statutory
23 unit; is that correct?

24 A. That's correct, and if you look at the map you
25 can see, particularly there along the second lines, the

1 numerous number of wells that have actually been drilled at
2 unorthodox locations in that unit. We basically did a very
3 similar type of application.

4 Obviously, we have to still submit our unorthodox
5 requests to the local OCD office, but by the order giving
6 them the authority and they're able to actually approve
7 those locations and verify that they conform with the
8 order.

9 MR. CARR: May it please the Examiner, the Burch-
10 Keely Unit was approved by Order R-7900-A. It's dated
11 October 28th, 1993.

12 Q. (By Mr. Carr) Mr. Miller, you will review the
13 Burch-Keely Unit in more detail later in your presentation,
14 will you not?

15 A. Yes, I will.

16 Q. What rules currently govern the development of
17 this area?

18 A. Currently we're under statewide rules that
19 provide for 40-acre spacing for oil wells with 330-foot
20 setbacks from the outer boundary of the dedicated units,
21 and that we would propose to maintain the standard setback
22 from the unit boundary to increase the flexibility for the
23 interior tracts.

24 These are all federal leases. We are in what is
25 called Beargrass Draw. We have some extremely fun

1 archaeological challenges, as well as existing right-of-
2 ways, pipelines and all that make it very interesting. So
3 having that flexibility is good, as well as trying to
4 develop efficient patterns.

5 Q. Could you briefly review the history of the
6 formations that are the subject of this Application?

7 A. The development in this area began in the late
8 1920s, and actually I'll give a lot more information on
9 this background later in the testimony.

10 Q. When did Marbob actually acquire its interest in
11 the area?

12 A. We acquired our interest in the Dodd properties
13 in October of 1982. It was a Sun Oil Company divestiture.

14 Q. What is the current status of waterflood
15 operations in the proposed area?

16 A. The -- If you'll refer to Exhibit Number 2, that
17 is a list of the injection wells with the OCD order that
18 are identified.

19 Now, there have been other wells that have been
20 approved inside this unit over the years, but these are
21 actually the current active injection wells and the orders
22 that actually relate to them and the date of the order.
23 And also, behind that listing, is a copy of the particular
24 orders.

25 Q. Approximately how many additional wells does

1 Marbob anticipate drilling within this unit area?

2 A. Our original plan that was submitted to the BLM
3 called for the drilling of 30 to 35 wells in the next three
4 years, in our plan of development. I feel certain in this
5 price environment that we will probably do more work than
6 what we had originally planned.

7 Q. And how many of these wells do you anticipate
8 being drilled at an unorthodox well location?

9 A. I would suspect that most of the wells would
10 actually be at unorthodox well locations. We have not
11 actually picked the specific locations, pending approval,
12 but most of our Burch-Keely wells, and I anticipate most of
13 these, would also be at unorthodox locations.

14 Q. The request for blanket approval for future
15 unorthodox well locations, is that the only issue in the
16 case being presented today that actually relates to
17 waterflood operations?

18 A. Certainly it's one of the issues, as we'll point
19 out later on when we look at a map of the current injection
20 wells, but it's not the only issue with the current
21 waterflood.

22 Q. Let's go to Exhibit Number 3. Could you identify
23 and review that for Mr. Catanach?

24 A. Exhibit Number 3 is actually a smaller map that
25 just outlines the unit area. It identifies the various

1 leases contained in Section 10, 11, 14, 15, 22.

2 Marbob is actually -- Well, let me go back.

3 The blue in the northeast is what we call the
4 Raper Federal; that's operated by Marbob Energy. The
5 orange in the southeast of 11 is the Boyd Dodd Federal;
6 that's also operated by Marbob Energy. The large lease in
7 Section 10, 11, 15 and 14 that is in yellow is what we call
8 our Dodd B Federal; it's operated by Marbob Energy.

9 The darker green, both in Section 14 and 22, is
10 what we call our Dodd A; it's operated by Marbob. The
11 lighter-shaded green in 15 and 22, Marbob operates the Dodd
12 A from a depth of surface to 4000 feet, and Mack Energy
13 operates the Pinon Federal lease from 4000 to 5000 feet.
14 Each of the tracts are on federal leases. All of the
15 tracts are subject, I believe, to royalty reduction except
16 for the Pinon Federal.

17 Q. What is the character of the land in the unit
18 area?

19 A. It is all federal land.

20 Q. Let's go to Exhibit Number 4. Would you identify
21 that?

22 A. Exhibit Number 4 is the unit agreement, and it's
23 a BLM kind of standard form unit. It shows the lands, it
24 provides for waterflooding, it sets out in the exhibits the
25 participation of the parties and provides for a periodic

1 filing of plans of development.

2 The Exhibit A to the back is virtually the same
3 map that we looked at, the Exhibit B is a list of the
4 ownership of each tract, and Exhibit C is the tract
5 participation factors, and we'll probably talk more about
6 that later on in our testimony.

7 Q. Would you identify Exhibit Number 5?

8 A. Exhibit 5 is the unit operating agreement. It
9 winds up -- It's fairly standard in its form, very similar
10 to the unit operating agreement that we have for the Burch-
11 Keely. It outlines the supervision and management of the
12 unit, defines the rights and duties of the party, shows how
13 investment and costs are shared. It sets forth the
14 accounting procedures and how costs are to be allocated and
15 paid, and it contains most of the standard provisions.

16 The overhead rate, if you're curious and don't
17 want to dig through it, is set at \$300 per well per month.

18 Q. Has Marbob reviewed this Application with the
19 Bureau of Land Management?

20 A. Yes, Exhibit 6 is a preliminary determination
21 from the BLM, indicating that based on other approvals,
22 including your all, that they believe that the unit -- that
23 they would concur with the unit.

24 I remember when we did the Burch-Keely Unit in
25 1992 and 1993, it took several meetings with the BLM, and

1 this time we actually had one meeting with them, and
2 probably because of the success there on the Burch-Keely,
3 they -- which we visited with them at length about -- they
4 were agreeable to support this Application for the unit.

5 Q. And there are no state lands in the unit area?

6 A. No, there are no state lands in the proposed
7 unit. There are state lands outside the unit, but not in
8 the proposed unit area.

9 Q. Could you refer to what has been marked for
10 identification as Marbob Exhibit Number 7? Identify this
11 and review it for Mr. Catanach.

12 A. The Exhibit 7 is just basically a list of the
13 working interest owners and their percentages in the
14 various tracts involved in the unit. Out to the side where
15 it says "yes", that means that the folks have actually
16 signed the unit agreement or a ratification to the unit
17 agreement.

18 Down there are two parties, down there, that
19 actually the indication is "selling", and at the time we
20 proposed the unit we also offered each of the working
21 interest owners the opportunity, if they would so choose,
22 to actually sell their interest, rather than participate
23 with a small interest in this fairly large unit. Two
24 parties have indicated their desire to sell, and we have
25 forwarded the appropriate paperwork to them.

1 The parties who do not have a "yes" by their name
2 would actually be unsigned at this point.

3 Q. What percentage of the working interest is now
4 voluntarily committed to this unit plan?

5 A. At this point, based on what we had received
6 through Tuesday at the office, the first tract is 100-
7 percent committed. The Pinon Federal, which is identified
8 as the Tract 1 B, the percent of commitment would be
9 69.7496 percent.

10 Tract B, or the Boyd Dodd Tract Number 2 -- I'm
11 sorry, it's the Dodd B, is Tract Number 2, is 100-percent
12 committed. Tract 3 is 100-percent committed, and Tract 4
13 is 100-percent committed.

14 Q. Let's go to Exhibit Number 8. Would you review
15 the status of the overriding royalty interest in the unit
16 area?

17 A. Exhibit Number 8 shows all of the overrides. And
18 in the federal lease that is referred to as the Dodd A and
19 the Pinon, that was at one point, I believe, owned by
20 Leonard Oil Company, and they assigned a large number of
21 overrides to a large number of folks. Now the total in the
22 Dodd A is 7 1/2 percent. But anyway, that's where all of
23 these folks originate from.

24 But anyway, all of the items that are -- each one
25 of them that are listed it shows their interest, it shows

1 -- if they have signed a ratification, it has a "yes"
2 beside their name.

3 And then on the second page you see virtually the
4 same list of folks for the Pinon lease, with a couple of
5 additional folks shown at the bottom of that list, because
6 they also have overrides on the Pinon. There are no
7 overrides on Tract 2. There are four overrides on Tract 3
8 and no overrides on Tract 4.

9 Q. What percentage of the overriding royalty
10 interest ownership is committed to the unit?

11 A. In the Tract 1 there on the front page, the
12 total, if my calculator was working right, was 77.537
13 percent is committed. That's 21 of 31 parties.

14 On the Pinon lease the percentage is 83.257.
15 That's 23 of 33 parties.

16 On the Tract 2 it's not applicable since there
17 are no overrides.

18 On Tract 3 it's 50 percent, being two of four
19 parties.

20 And on Tract 4 it's not applicable since there
21 are no overrides.

22 Q. And the base royalty is all federal?

23 A. The base royalty is all federal, and the BLM
24 obviously has already given tentative approval.

25 Q. Could you just briefly summarize the efforts you

1 have made to obtain the approval of all the overriding
2 royalty interests?

3 A. We didn't spend a tremendous amount of time and
4 effort, actually, you know, in looking to try to get folks
5 to join. What we did is, we basically sent the agreement
6 with a cover letter and asked for their ratification.

7 Obviously a second notice was sent based on this
8 letter by the attorney's office.

9 In my cover letter I asked if they had any
10 questions or issues to please contact our office. We have
11 had several parties contact us. Four of these interest
12 owners, I believe, live in Norway, and one of them actually
13 called me, I believe, from Oslo, Norway, and I'm sure it
14 cost him as much calling me as what it cost us sending him
15 certified receipt return letters.

16 But anyway, his primary concern was whether or
17 not by signing he was in any way, shape, selling his
18 interest, and I assured him that he was not, and he signed
19 and sent his ratification back in. But we have had no one
20 actually object or indicate that they have any concerns
21 about our percentages or allocations in the plan.

22 Q. Mr. Miller, would you refer to what has been
23 marked Marbob Exhibit 9, identify that and explain what
24 that is to Mr. Catanach?

25 A. Okay, before I do that, I want to go up and say

1 one other thing, because you thought I covered that but I
2 didn't.

3 The one thing that I do want to put on the record
4 is that this agreement obviously has two operators
5 involved, and Mack Energy, the owners, we spent a
6 considerable amount of time talking to them about this
7 proposal over the last year, and I do want to publicly
8 thank them for their consideration and actual support of
9 this Application. Being ex-partners, we were very
10 concerned as to whether we would ever receive their support
11 and recognize that we could go forth without that tract,
12 but I do appreciate their consideration in supporting the
13 Application.

14 Now are you ready for Exhibit 9?

15 Q. I'm ready for Exhibit 9, and I didn't know you
16 were going to thank Mack, just for the record.

17 A. Exhibit 9 is offset operators and owners, and
18 it's probably not the most professionally done exhibit, and
19 you may recognize my own handwriting there.

20 The orange which bounds the east side, southeast
21 side and then some on the west, Marbob Energy is actually
22 owner and operator of those offset leases. The Number 1's
23 to the south there, Marbob and Vintage Drilling are the two
24 operators in those tracts. Marbob has the Yeso rights, and
25 Vintage has the Grayburg-San Andres.

1 The blue along the northeastern side is Webb Oil,
2 in the Spur Lake 12 Unit. Then there are a series of small
3 operators or, in the case such as like Number 5 up there,
4 it's an unleased state tract, and the Commissioner of
5 Public Lands was actually notified.

6 So there has been notification of each of the
7 offset operators or owners of each tract to the exterior
8 boundaries of the unit.

9 Q. Mr. Miller, is Exhibit Number 10 an affidavit
10 from Holland and Hart confirming that notice of this
11 Application has been provided in accordance with the
12 Division Rules to all interest owners in the unit and also
13 to the offset operator?

14 A. Yes, that's copies of the notice letters and
15 notice of publication.

16 Q. Would you identify Exhibit Number 11 for us?

17 A. Exhibit Number 11 is a hand-delivered letter to
18 Vintage Drilling, and the second page is where Mr. Hope,
19 the manager for Vintage Drilling, LLC, executed my hand-
20 delivered letter.

21 I literally went brain-dead when I did my offset
22 operators, and Mr. Hope was kind enough to actually sign
23 the waiver since I failed to give him the required notice.

24 Q. Let's now go to the geological portion of the
25 case. Would you identify for the Examiner the formations

1 that Marbob proposes to unitize?

2 A. We would actually ask that the unit cover
3 multiple formations, the Seven Rivers, Queen, Grayburg, San
4 Andres, and what is called the Yeso-Paddock. It's really
5 identified as the Yeso, but some folks call it the Paddock
6 formation.

7 Q. Could you refer to Exhibit Number 12 and show how
8 that unitized interval is actually to be identified in the
9 unit?

10 A. The Exhibit Number 12 is a log on a deep well
11 located in Section 14. It's the Dodd B Deep Number 2. The
12 log shows a lot of different things on it that -- it winds
13 up showing the top of the Seven Rivers as being something
14 around 1291 feet. It shows the Queen top being at 1894.
15 It shows the top of the Grayburg at 2212, and then shows
16 the San Andres at 2594, and then on down it shows the
17 Glorieta at 4013, and the Yeso actually at 4097.

18 It winds up being a thing where the Grayburg, as
19 you can see on the log, is about a 300- to 400-foot-thick
20 section of dolomite, which contains 5- to 20-foot-thick
21 sandstones known locally as the Loco Hills section, the
22 Metex section and the Premier sand, the Premier sand being
23 the one at the base of the Grayburg section, directly on
24 top of the San Andres.

25 The San Andres is approximately a 1400-foot-thick

1 section of massive dolomite with two regionally productive
2 zones known as the Jackson and the Keely zone.

3 The Yeso-Paddock -- and I keep saying Paddock,
4 but it's really the Yeso formation -- is approximately a
5 500-foot-thick dolomite with scattered thin sands. The
6 productive portion is in the upper portion of the
7 formation.

8 Q. Has the portion of the reservoir that you're
9 proposing to unitize been reasonably defined by
10 development?

11 A. Yes, both by shallow wells and deep wells.

12 Q. Let's go to the first of your structure maps,
13 Exhibit Number 13, and I'd ask you to review that for the
14 Examiner.

15 A. This is a structure map base on the top of the
16 San Andres, and probably the -- it's a -- you know, you can
17 see the unit or proposed unit is there in the middle,
18 outlined, and it's a larger look. It's more of a regional
19 map. The unit area is crestal and laying -- or a northern
20 flank of a large eastward-plunging fold. And if you can
21 think of it, it's kind of like you're folding the map over,
22 and it's plunging slightly to the east, is what it's trying
23 to describe. But it's fairly uniform.

24 Q. Let's go to the next structure map, in greater
25 detail, Exhibit 14.

1 A. Yeah, Exhibit 14 virtually the same structure
2 map, being again the top of the San Andres. The difference
3 is that the contour intervals here are on a 20-foot contour
4 instead of 50-foot.

5 Across most of the proposed unit area, the San
6 Andres dips east at 25 to 50 feet per mile. The measured
7 depth of the San Andres across the area is plus or minus
8 about 2500-foot measured depth and about 1050, or plus
9 1050, subsea.

10 Q. All right, Mr. Miller, let's now look at the
11 isopach map, Exhibit 15.

12 A. The isopach map is basically a gross-thickness of
13 the San Andres, which is base of the Grayburg to the top of
14 the Glorieta. The San Andres across the unit is a fairly
15 uniform thick. There are discrete pays of the Jackson and
16 Keely zones of the San Andres, inside the San Andres, which
17 should be floodable. The Keely has been flooded in times
18 past in Section 22, along with some of the Grayburg sands
19 which lay above this isopach should be potentially
20 floodable, and we're also looking at the potential of the
21 Yeso being a potentially productive flood interval for
22 secondary recovery below the San Andres.

23 But this is basically just an isopach map of that
24 total San Andres interval.

25 Q. Let's go to the first of the cross-sections,

1 Exhibit 16.

2 A. 16 is basically a north-south large-scale
3 stratigraphic cross-section that shows basically from
4 almost the surface to 5000 feet and uses the Rustler as a
5 datum to actually hang across the top.

6 It shows the formation picks and the pay zones.
7 Obviously, we're requesting that all the pays are actually
8 included in the proposed unit.

9 I will note for you that the far-right log is
10 actually an open-hole log, where I believe the other three
11 logs shown on the cross-section are actually cased-hole
12 logs. So sometimes it's -- they look very different,
13 depending on -- and some of them it's also an age issue as
14 well.

15 Q. All right.

16 A. But you can see the Grayburg pay, the Jackson,
17 the Keely, the Yeso pay is identified on the map and
18 appears to be somewhat uniform across the unit.

19 Q. Let's go to Exhibit 17.

20 A. Exhibit 17 is a north-south small-scale
21 stratigraphic cross-section with the top of the San Andres
22 as the datum. Also noted are the Lovington Sand and the
23 Keely marker.

24 The light band of green that you see in the
25 middle of each of the logs is the perforated interval of

1 each of these wells. These are all cased-hole logs that
2 you're looking at here.

3 Q. Okay. Let's now go to Exhibit 18.

4 A. Exhibit 18 is virtually the same exhibit as
5 Exhibit 17. Whereas 17 was on the eastern side of the unit
6 area, 18 here is a north-south that's more along the
7 western side.

8 Again, the same markers are identified, and again
9 these are all cased-hole logs, and again you can see the
10 perforated intervals that are shown on the logs.

11 Q. Okay, and let's look at the southern portion of
12 the unit area, Exhibit Number 19.

13 A. Exhibit Number 19 is a north-south cross-section
14 that's largely across the very southern portion of the unit
15 area, and it uses the base of the Glorieta, top of the
16 Yeso, as the datum that it's hung on.

17 It shows the perforated interval in three wells
18 that are actually Yeso producers, and these logs are all
19 open-hole logs of more recent vintage than the other logs
20 that we looked at, and the area that's identified by the
21 perforated interval is one of what we believe is the
22 potential targets for secondary recovery.

23 Q. Mr. Miller, can the portion of this pool which is
24 included in the proposed unit area be efficiently and
25 effectively operated under the proposed unit plan of

1 development?

2 A. Yes, we think it can, simply because this unit
3 basically groups all of the remaining federal leases, which
4 are bounded on three sides by other units. So it's the
5 last remaining leases in that area that are already not
6 unitized.

7 Q. Let's look at the engineering part of the case.
8 Are you familiar with the Statutory Unitization Act?

9 A. Yes.

10 Q. Let's go to Exhibit Number 20. Would you
11 identify that for the Examiner?

12 A. The Exhibit Number 20 is actually the current
13 status of all the wells in the unit. The orange dots are
14 actually current active injection wells. The black dots
15 are current active producing wells operated by Marbob. And
16 down in Section 22 there are two red dots which are the two
17 Pinon leases which are currently operated by Mack Energy.

18 What I'd like to do is give a little bit of some
19 of the background as to how all this developed.

20 The Grayburg-Jackson field was discovered in
21 March, 1929, by Flynn, Welch and Yates. The discovery
22 well, the Jackson Number 1, was located in Section 13 of
23 Township 17 South, Range 30 East, Eddy County, New Mexico.
24 It was drilled with cable tools, shot with nitroglycerine
25 in open hole and completed in an interval of dolomite 200

1 feet to 400 feet below the top of the Permian-age San
2 Andres formation.

3 In the ensuing years since discovery, the
4 drilling of over 1900 wells has extended the field limits
5 into parts of Township 16 and 17 South and Ranges 29, 30
6 and 31 East of Eddy County. More recent wells have been
7 drilled with rotary tools, set casing through the pay,
8 perforated and stimulated by various means including sand
9 frac and hot-acid treatment. Production is now obtained
10 from the Seven Rivers, Queen, Grayburg and San Andres
11 formations, all of which are Permian age.

12 General American completed the discovery well,
13 Number 17 Burch A, in Section 18 of 17-30, Eddy County, for
14 the Grayburg-Paddock field on May 1st, 1957. The well was
15 completed open hole in the Permian-age upper Yeso, but only
16 produced for a short period of time with a reported
17 cumulative production of 12,819 barrels of oil.

18 It wasn't until the mid-1990s that Yeso
19 development began in earnest in this area. The field has
20 been designated the Empire Yeso East, and to date some 118
21 wells have been drilled in Township 17 South, Range 29
22 East. The Empire-Yeso East field underlies a portion of
23 the Grayburg-Jackson field.

24 Cumulative oil and gas production for these
25 fields, as reported by the New Mexico Oil and Gas

1 Engineering Committee as of May of last year, was, the
2 Empire East-Yeso had produced 5,620,932 barrels of oil and
3 12,088,545 MCF. The Grayburg-Jackson field had produced
4 131,878,836 barrels of oil and 150,001,028 MCF of gas.

5 Q. Let's go to Exhibit 21, the comparative
6 production schedule, and would you review the information
7 on that exhibit for Mr. Catanach?

8 A. The graphs here are just basically a production
9 history of the last 24 or 25 years of production. Let me
10 make sure I'm in the right spot, because I don't want to
11 get messed up here. It is the history of the Marbob-
12 operated leases with the individual lease history attached
13 behind.

14 The total cumulative lease oil is actually --
15 production, is shown in the upper right-hand corner. You
16 can see -- In the top graph, like I say, is a cumulative of
17 all the Marbob-operated leases. You can see that when
18 Marbob acquired the properties in 1982 there has been a
19 substantial rise in production, and production has
20 continued to be better than it was previously before we
21 purchased it from Sun.

22 The graphs and the prior statistics tell an
23 excellent story, but drilling activity in the individual
24 fields named above has slowed down to a trickle because
25 most of the, quote, low-hanging fruit has been harvested or

1 is in the process of being harvested.

2 If one were to refer to the Seven Rivers-Queen-
3 Grayburg-San Andres as being the shallow formations and the
4 Glorieta-Yeso as being the deep formations, neither the
5 shallow nor the deep offers the prospect of sufficient
6 reserves by themselves to provide for commercial
7 development.

8 Now, I will say today's prices make that
9 statement a little bit suspect, but that certainly would be
10 true under the traditional price scenario.

11 Unitizing, however, greatly enhances the prospect
12 for economic recovery of additional oil and gas under these
13 fields. Consider the Burch-Keely Unit operated by Marbob
14 Energy.

15 During calendar year 1992, the pre-unitization
16 production for those leases that now make up the Burch-
17 Keely Unit average 312 barrels of oil a day, 817 MCF and
18 851 barrels of water per day from 133 producing wells, or
19 an average slightly greater than two barrels of oil per
20 day, per well.

21 In December, 2003, the Burch-Keely Unit averaged
22 a production of 5265 barrels of oil a day, 12,502 MCF of
23 gas per day, and 10,898 barrels of water per day. This was
24 a per-well average of 19 barrels of oil a day from 274
25 producing wells.

1 At the time of unitizing, it was forecast that
2 the unitization would result in future recovery of
3 5,795,838 barrels of oil. This recovery for the total
4 perceived ultimate was surpassed in 1999, the seventh year
5 of unit operations.

6 To sum up, the Burch-Keely at the end of year
7 2003 exhibited production enhancement of 4953 barrels of
8 oil per day from the pre-unit production level, an
9 annualized growth rate of 144 percent, and the cumulative
10 production to December 31st, 2003, under unit operations is
11 about two times the forecasted ultimate production for the
12 unit, and it is still going strong.

13 Marbob Energy operates four leases, namely the
14 Dodd A Federal, the Dodd B Federal, the Tom Boyd Dodd
15 Federal, the Raper Federal, and Mack Energy Corporation
16 operates the Pinon Federal, all of which lands lie within
17 the proposed Dodd Federal Unit.

18 The minerals under a portion of the Dodd A
19 Federal and the entire Pinon Federal leases have been
20 divided up with Marbob operating the shallow rights and
21 Mack operating the deep rights. All of these leases are
22 offset by the Burch-Keely unit.

23 A statistical study was conducted of 110 wells,
24 not all of which are currently active, that have been
25 reported production from the shallow formations underlying

1 the leases proposed for unitization. This study concluded
2 that drilling in the shallow formations at this time might
3 yield reserves of 39,000 barrels of oil per well, after
4 accounting for prior drainage. This amount of oil is not
5 sufficient to provide a reasonable return on investment.

6 Likewise, a statistical study per well, ultimate
7 recovery, was made on the deep penetrations proposed in the
8 Dodd Federal Unit. Because of the small number of deep
9 wells drilled on these five leases, the study was expanded
10 to include all the deep wells located in Township 17 South,
11 Range 29 East, and situated along the edge and away from
12 the, quote, sweet spot of the deep formations.

13 The low number of deep wells available for
14 analysis increases the uncertainty in defining the reserves
15 that might underlie the underdeveloped acreage proposed for
16 unitization. However, the data when plotted suggested a
17 log-normal distribution and indicate a reasonable recovery
18 of 55,000 barrels of oil per well. A non-economic recovery
19 for a deep stand-alone well that might be drilled in those
20 areas that are well removed from those areas that have
21 penetrated the deep formations that underlie the proposed
22 Dodd Federal Unit and offer sufficient production history
23 to estimate per well ultimate oil recovery.

24 The fact that no deep wells have been drilled
25 north of the Mack Energy Corporation-operated Pinon Federal

1 Number 2, located in H of 22, 17-29, Eddy County, New
2 Mexico, strongly supports the conclusion that this area
3 does not contain sufficient stand-alone deep reserves to
4 justify further drilling.

5 Under unitization however, projected shallow plus
6 deep recovery of 94,000 barrels of oil per well is
7 economically viable. Using offset well expected ultimate
8 recovery that was adjusted for the increased well density
9 in the south of the proposed Dodd Federal Unit, reserves
10 were estimated for 10-acre spacings where economically
11 feasible, reserves were estimated for 20-acre spacings for
12 the remainder of the acreage proposed to be unitized, with
13 the exception of the tier of 40-acre locations along the
14 north end of the Dodd Federal Unit area, which contains no
15 penetrations, neither shallow nor deep. Reserves were
16 assigned by a 40-acre subdivision in this area.

17 It is estimated that reserves to be gained under
18 the proposed unit will be in excess of 13.7 million barrels
19 of oil, an increase of some 11.4 million barrels of oil
20 over the remaining recovery estimated under competitive
21 operations.

22 An increase in the estimated oil recovery of this
23 magnitude clearly shows that the proposed Dodd Federal Unit
24 will result in the prevention of waste and the conservation
25 of natural resources.

1 Other benefits of the proposed Dodd Federal Unit
2 involve the consolidation of flow lines and tank batteries,
3 which lead to reduced right-of-way and operating costs and
4 the ability to drill unorthodox locations to aid in
5 maximizing future recovery of oil and gas.

6 This enhancement of oil and gas recovery won't
7 come cheap, as an estimated expenditure of \$86.5 million
8 will be required to cover the cost of perforation and
9 completion of shallow oil and gas contained behind the pipe
10 in the existing deep wells and to drill and complete an
11 additional 122 deep wells to more fully develop the
12 proposed Dodd Federal Unit.

13 The proposed tract participation factors for the
14 proposed Dodd Federal Unit are based on cumulative oil
15 production through December 31st, 2003, oil production for
16 the calendar year 2003, remaining reserves to be achieved
17 under competitive operations expressed as barrels of oil
18 equivalent, and remaining reserves to be gained under
19 current unit operation, also expressed under barrels-of-oil
20 equivalent.

21 Cumulative oil production is a measure of lease
22 size, reservoir quality and timing of development. Annual
23 production for 2003 is an indicator of current cash flow.
24 Future reserves, expressed as BOE to reflect the increase
25 in commercial importance of casinghead gas, are the main

1 drivers of the proposed Dodd Federal Unit. We used a 6-
2 MCF-barrel-of-oil conversion factor.

3 While secondary recovery has been done on parts
4 of the unit area, such as the Keely zone and the San Andres
5 in Section 22 and the Metex zones in Sections 14 and 15, we
6 believe there is still tremendous potential for additional
7 secondary recovery. Presently injection is being done in
8 the Dodd A, the Dodd B and Boyd Dodd leases for secondary
9 recovery. We plan to continue those projects and drill and
10 evaluate infill wells.

11 If initial production rates similar to the offset
12 unit are found, then our focus will be centered on an
13 infill program. If reservoir pressures are significantly
14 reduced and other formations do not provide good production
15 rates, then pilot floods will be initiated on several
16 horizons after receiving approval for injection wells from
17 the OCD to evaluate which of the horizons would be most
18 productive under secondary recovery.

19 We plan on using no fresh water in any of the
20 current or future flood operations. We are currently
21 disposing of several thousand barrels of produced water in
22 the Saber Federal saltwater disposal well in Section 11 of
23 this unit in the Cisco formation.

24 If our flood-water needs exceed our current
25 produced-water volumes, then we can pull the packer and

1 tubing out of the Saber, run a sub pump into the wellbore,
2 and produce thousands of barrels of compatible water for
3 secondary recovery.

4 Finally, we are not seeking any tax incentives
5 for this project, we are merely trying to achieve a way to
6 maximize additional recovery of marginal reserves and
7 fairly allocate the future benefits of secondary recovery.

8 Q. Mr. Miller, Marbob is currently conducting
9 waterflood operations throughout a large portion of the
10 unit area?

11 A. Yes.

12 Q. Based on that experience, can you tell the
13 Examiner that what you're proposing here today in terms of
14 waterflooding on a larger basis throughout the unit area,
15 that in fact what you're proposing is feasible?

16 A. Yes, it is feasible.

17 Q. Will unitization and adoption of the proposed
18 methods of operation benefit all interest owners within the
19 unit area?

20 A. We truly believe that all owners will benefit,
21 and I believe the feds concur with that conclusion.

22 My only problem is -- I should have done it
23 sooner -- Mr. Gray, who was the owner of this company until
24 he passed away in 2001, had asked me to get this done in
25 the 1990s. Unfortunately, we get too busy with other

1 projects. When he passed away, his son brought this
2 forward as one of the things his dad thought should have
3 been done years ago, and he has pressed me to get it done,
4 and I wish it had been done before this price of oil,
5 because we should be out there producing some good wells
6 with higher production rates. But I certainly believe it's
7 to the benefit of everybody.

8 Q. Is unitization necessary to effectively carry on
9 the secondary operation?

10 A. Yes.

11 Q. And it is your testimony that these operations
12 will increase the ultimate recovery of oil from the unit
13 area?

14 A. Yes.

15 Q. In your opinion, will approval of this
16 Application be in the best interest of conservation, the
17 prevention of waste and the protection of correlative
18 rights?

19 A. Yes.

20 Q. Were Exhibits 1 through 21 either prepared by you
21 or compiled under your direction and supervision?

22 A. Yes.

23 MR. CARR: May it please the Examiner, at this
24 time we would move the admission into evidence of Marbob
25 Exhibits 1 through 21.

1 EXAMINER CATANACH: Exhibits 1 through 21 will be
2 admitted.

3 MR. CARR: That concludes my direct examination
4 of Mr. Miller.

5 EXAMINATION

6 BY EXAMINER CATANACH:

7 Q. Mr. Miller, within the unit area, there's two
8 different pools, right?

9 A. Yes.

10 Q. One's the Grayburg-Jackson, and one is the East
11 Empire-Yeso?

12 A. Yes. On the Burch-Keely Unit, what we were
13 allowed to do is, basically that unit extended the limits
14 500 feet into the Glorieta-Yeso formation, and we were
15 actually allowed to report for the Burch-Keely Unit all of
16 the production in the Grayburg-Jackson Unit. That allows
17 us to downhole commingle and produce all of the reserves,
18 both from Yeso, San Andres, Grayburg, Seven Rivers, in a
19 common wellbore.

20 Q. Let me make sure I understand. You were allowed
21 in the Burch-Keely to -- you extended the bottom vertical
22 limit of the Grayburg-Jackson Pool to include that
23 interval?

24 A. To include that interval, and those wells are
25 completed in multiple horizons, Yeso, and we would need to

1 have that same -- you know, we're asking for the same
2 ability through this unitization to actually be able to
3 produce the wells in multiple intervals in the same
4 wellbore.

5 Q. But you're not asking in this Application to
6 extend the boundaries of the Grayburg-Jackson?

7 A. May have to come back, if I need to, in a
8 subsequent Application and do that.

9 Q. Okay. Basically at this point in time the
10 Grayburg-Jackson has been fully developed, at least on 40-
11 acre spacing, in the unit area, right?

12 A. Yes. If you look to the very north there are a
13 couple of 40s that do not have producing wells currently on
14 them. I believe there are one or two tracts that actually
15 have not been drilled on the very northern edge.

16 Q. Okay. The Yeso development has been limited to
17 the Pinon lease; is that correct?

18 A. No, there are actually Yeso producers by Marbob
19 in Section 22 -- let me look at -- one of these strats
20 probably has a couple of ours. The Dodd A 50 in Section 22
21 and the Dodd A 49 in Section 22 are both completed as Yeso
22 producers in Section 22, and I believe those wells have
23 downhole commingling, allowing them to produce out of the
24 Yeso and the Grayburg-Jackson Pool together.

25 Q. Okay, so basically that Yeso development is

1 limited to Section 22 at the south end of the field, south
2 end of the unit?

3 A. The development in this group of leases has
4 largely been limited to Section 22. In the Burch-Keely
5 Unit to the east, if you look up there in Section 13 on the
6 Midland map, I believe wells 255, 215, 286 there in Section
7 13 and like the southwest-southwest quarter are actually
8 drilled into the Yeso and are Yeso producers.

9 Q. So even on the Burch-Keely Unit, you've not
10 extensively developed the Yeso? It's just been in a few
11 wells?

12 A. No, it's been fairly extensively developed in the
13 Burch-Keely. In fact, probably 130 wells have been drilled
14 to the Yeso with almost every one of them having some level
15 of economic reserves in the Yeso.

16 With the Yeso, as with many of these formations
17 in this area, we seem to be influenced probably by the
18 Empire-Abo reef, and everything on the northern flank of
19 this reef lays fairly uniform across the top, seems to thin
20 as you go to the north, you know, the productive horizons.

21 As you go to the south or seem to cross that
22 reef, everything seems to plunge radically. In the
23 southern portion of the Burch-Keely you'll notice there,
24 and particularly in Sections 25 and 26, that there are a
25 lot of penetrations or a lot of wells in the northern half

1 of those sections, but not in the southern half.

2 What we have found is, as we drilled south with
3 the Yeso penetrations, we were achieving much higher water-
4 cut rates and lower oil rates and plunging off of that --
5 or plunging deeper into the basin.

6 So we believe that, you know, there is the
7 possibility of Yeso production to the north, and the deep-
8 well logs indicate that, you know, it is somewhat feasible.

9 The key becomes -- and, you know, obviously part
10 of it is technology. We've certainly, by the extensive
11 amount of wells that have been drilled both east and west
12 of here, we've developed some better techniques that
13 hopefully will justify multiple-horizon completions.

14 Q. Okay. The plan in the proposed unit is to drill
15 additional wells to develop the Yeso. Did you say about
16 120 or so?

17 A. The engineer -- an outside engineer has done our
18 engineering reports. He was originally with Sipes
19 Williamson. He then went to Ryder Scott, and in the
20 downturn of engineers he was laid off and went out on his
21 own. But he has done our outside engineering work for
22 years, in fact, over 20 years.

23 And he has probably done more reservoir
24 engineering work on the Yeso than any engineer, simply
25 because he also is an outside engineer for Mack Energy.

1 And between Mack Energy and us, we probably have developed
2 80 to 90 percent of the Yeso wells in Eddy County, New
3 Mexico.

4 His evaluation as to the numbers which -- I mean,
5 I'm conservative, and the numbers with those millions of
6 barrels of oil that he identified are based on his belief
7 that we might ultimately drill an additional 122 wells
8 inside the unit area.

9 Now, we actually, under our plan of development
10 filed with the BLM, identified that in the next three years
11 that we would actually probably 30 to 35 wells and
12 undertake a pilot flood within the unit area.

13 Now, those estimates of wells and the timing of
14 our pilot flood was actually based on more normal pricing
15 scenarios. Today's price scenario, Mr. Gray would have no
16 problem initiating the pilot flood within a year and, if
17 the partners are agreeable, would not have any problem with
18 possibly drilling 30 to 35 wells in the next year inside
19 this unit area.

20 We believe that -- and you know, we wound up --
21 we acquired this unit in 1982, we drilled quite a few wells
22 -- or we acquired these properties in 1982. We drilled
23 quite a few wells and developed additional Grayburg and San
24 Andres reserves in the 1980s here.

25 When we acquired the Burch-Keely in 1992, that

1 unit became the focus of all of our work. We hired some
2 real engineers and real geologists, and they have spent all
3 their time and effort working the Burch-Keely. The Dodd A,
4 Dodd B properties have certainly languished just because of
5 the success and our focus in the Burch-Keely, and we
6 believe that if we're successful with putting the unit
7 together, having the ability to complete wells in multiple
8 horizons and ultimately do secondary recovery in several of
9 the different horizons, I honestly believe, Mr. Catanach,
10 that this unit will be producing 70 years from now. There
11 is tremendous potential left in these fields.

12 Q. Okay. The new wells, will they be completed in
13 both the Yeso and the Grayburg-Jackson?

14 A. We would like to be able to complete the wells in
15 the Yeso formation, the San Andres and the Grayburg.

16 Q. So anywhere in the unitized interval?

17 A. Yes, sir. Primarily, the shallow horizons, Queen
18 and Seven Rivers, have not been identified as highly
19 productive in this area.

20 We ask that they be included in the unit simply
21 such that at a time when an older well or even a new well,
22 you know, years in the future, might be considered for
23 plugging, that if there are any additional reserves that
24 could be captured in those shallower formations, that they
25 be allowed to be produced into the unitized interval,

1 because the owners will have paid, basically, and it should
2 not go back to a lease basis.

3 Q. Okay. Down in Section 22, you've got Mack Energy
4 that operates a couple -- is it two wells?

5 A. Two wells, the Pinon Federal Number 1 and Number
6 2.

7 Q. And those are Yeso wells?

8 A. Those are Yeso wells.

9 Q. And are they going to continue to operate those
10 wells or --

11 A. No.

12 Q. -- or are you going to take those over?

13 A. Those wells, their rights and their partners, are
14 a part of this unitization. And they have -- Mack Energy
15 is the operator. Their interest in those properties is
16 owned by Chase Oil, Robert Chase personally, his brother
17 Richard Chase and his sister Jereen Diane Chase, and they
18 have all agreed to commit their interest to the unit.

19 Now, we're only asking that the unit extend to a
20 maximum depth of 5000 feet. Now, the Yeso is actually --
21 if we go back and look at that original log, the Yeso top
22 there in Section 14 was at 4100 feet.

23 But what we've found, Mr. Catanach, in the wells
24 that we've drilled from 17-31, all the way back over to 17-
25 27 in the Yeso is that basically the only productive

1 portion of the Yeso lays in the upper 400 to 500 foot of
2 the Yeso formation.

3 And so while the Yeso formation may extend below
4 5000 feet, we would ask that the cut be made at a depth,
5 you know, stratigraphic equivalent of the base of the Yeso
6 or 5000, whichever is lesser. And that way it basically
7 becomes a clear-defined, 5000-foot measured-depth cut as to
8 the rights being contained inside the unit.

9 But we believe that across the entire area, the
10 deepest portion of the field would be in Section 22, and we
11 don't believe there's any productive horizons below 5000
12 feet in the Yeso formation.

13 Q. Okay, the Mack wells -- you're going to operate
14 the Mack wells?

15 A. Yes, sir, they will be in the unit, are committed
16 into the unit if it's approved.

17 Q. Okay. Were you able to locate all the interest
18 owners in the unit, Mr. --

19 A. The working interest owners are all located. The
20 override owners, there is one override owner which we sent
21 to the last known address. The bad thing, when I looked at
22 what the refinery is doing is, they're actually paying that
23 interest to an escheat.

24 I contacted the other parties who have similar
25 names, or that their interest in the chain of title derived

1 in the same fashion, to see if I could find -- because what
2 I believe has happened is, this person is deceased and that
3 her children are the heirs. I talked with her brother-in-
4 law -- you know, in other words, her last name was because
5 she married.

6 But anyway, I talked to the brother-in-law to see
7 if he had any information regarding where I might find her
8 or any of her kids. He said that he had tried to
9 correspond with them several years ago, and they basically
10 -- I guess the family didn't get along, they didn't want to
11 have anything to do with them. He said he hadn't talked to
12 them in the last 10, 15 years, but that his sister might
13 have an address.

14 I got a phone number for her, he e-mailed her, I
15 left two different messages asking her if she had any
16 information as to where I might get ahold of the children
17 to contact us, and she never responded. So I have not been
18 able to find that one. It's a small override, but I have
19 not been able to find the actual heirs. We sent the notice
20 to the last address that we had.

21 Q. Okay. Did Marbob basically develop the tract
22 participation and just propose it to the working interest
23 owners?

24 A. Yes, we actually developed a tract participation
25 over a year ago with our outside engineer, and at that time

1 the participation factors that he worked up for like the
2 Pinon federal were about an 8-percent factor, whereas the
3 current proposed tract-participation factor is about a 14-
4 percent interval.

5 We had visited with Mack and talked with his
6 folks back then, because I really felt that because of the
7 difference in operations and all, his interest was probably
8 one that we needed to address to see if there was any
9 chance he would join. I recognize that we could go forward
10 with the unit without him, but we felt that it would
11 actually be certainly beneficial if we could achieve
12 agreement.

13 When I fired back up on this -- we all just get
14 too many projects going -- I contacted our outside
15 engineer, said, Do you still comfortable with these?

16 He goes, Well, I'm doing another update for you.
17 Why don't I revisit the numbers again? He says it wouldn't
18 hurt for me to do a little more extensive work.

19 At that point he came back with the revised
20 numbers, which actually improved the allocation of the
21 Pinon lease to about 14 percent of the unitization.

22 In looking at it, the overriding royalty owners
23 are involved -- or the majority of the overriding royalty
24 owners are involved in the Pinon and the Dodd A, which have
25 the largest factors outside of the Dodd B, but the increase

1 in factor for the Pinon was certainly -- affected those.

2 Also, these leases are subject, as I stated
3 earlier, most of them, to federal royalty reduction. I
4 know the feds reviewed and wanted to know what the royalty
5 rates were. Obviously the Pinon is under a 12-1/2-percent
6 royalty rate because it was drilled by a different operator
7 in a different horizon, which that 12 1/2 percent will come
8 across into the unitization, and the fact that the 14
9 percent was allocated to that lease, I believe they felt
10 that it was very equitable.

11 No one has indicated any expression of belief
12 that we have tried to manipulate the percentages or that
13 the percentages are not fair and equitable.

14 Q. Nobody's objected to them, as far as you know, or
15 expressed any concern about them?

16 A. No one has expressed any concern. Certainly no
17 objection was filed and no concern was expressed.

18 Q. Okay. As I understand it, you've got four
19 factors: cumulative production as of 12-31 --

20 A. Yes, and that's like a five-percent-weighted,
21 very small weighting on that.

22 Q. That's five-percent-weighted.

23 A. Right.

24 Q. You've got annual production for 2003?

25 A. That's also, I believe, five-percent weighting.

1 Q. Okay, the next factor, is it remaining
2 production?

3 A. It's reserves from competitive operations, is the
4 way it's defined, and it basically was given a 45-percent
5 weighted factor. And those are what our engineer believes
6 would be the just traditional decline of the existing
7 production over the next 20-some-odd years.

8 Q. Now, does that include the Yeso, or it does not?

9 A. It does include the Yeso, because the Pinon lease
10 obviously has two producing wells in the Yeso, and he
11 attributes 602,000 barrels of remaining reserves to the
12 Pinon lease under competitive operations, whereas
13 cumulative production to date has only been 97,000 barrels.

14 Q. Okay, and then the final factor is --

15 A. -- is reserves from unit operations, what he
16 believes can actually be our ultimate recovery through
17 additional development, as well as additional secondary
18 recovery work.

19 And those figures are wild. You know, the
20 reserves currently that he sees from competitive operations
21 remaining are 4 million barrels. The reserves that he
22 believes that we may be able to achieve are 19.5 million
23 barrels of oil equivalent. I mean, if we get half of that,
24 I'll be happy, particularly at today's prices. And it was
25 -- the last factor was also 45 percent.

1 There was no acreage factor considered, partly
2 because of the fact that, you know, we have split rights in
3 one 320-acre tract. We tried to actually give --
4 obviously, 90 percent of the value is based on engineering
5 of what is believed to be the future potential from these
6 leases.

7 Q. Okay, the Yeso reserves that are not yet
8 produced, that are not yet drilled or being produced
9 currently, those fall into the unit reserves?

10 A. Some of them fall into competitive operations.
11 The majority of them fall into the unit operations.

12 Q. And those reserves are based on -- The estimated
13 Yeso reserves are based on your experience in the Burch-
14 Keely, I assume?

15 A. He is utilizing some factor for Yeso based on
16 wells that have been drilled east and west and away from
17 the actual sweet spots.

18 The sweet spot of the Yeso in this area is
19 actually in Section 27. If you'll look at the Midland map,
20 the lease to the south of the unit line, which the shallow
21 is shown as the Vintage Drilling Robinson Jackson Unit,
22 there are several wells that say Marbob Barnsdall Federal.
23 That is probably the sweet spot for the Yeso production in
24 this area. The production rates off of those wells are
25 much higher than any of the wells that were achieved in 22.

1 But what you have is, you know, while the sweet
2 spots down here, the Yeso formation, may be productive for
3 two to three miles to the north, it just won't be as -- the
4 ultimates will be substantially less. But in the fact that
5 it's only a few hundred feet below the traditional
6 Grayburg-San Andres, if it only contributes 10,000 to
7 15,000 barrels of ultimate, that may certainly justify the
8 additional 600, 700 foot of drilling that is required.

9 Q. In the unit agreement it's got the tract-
10 participation numbers, or is that in the operating
11 agreement?

12 A. It's in the unit agreement.

13 Q. Okay, you do show the tract-participation numbers
14 for each tract?

15 A. Yes, the ultimate tract participation factor for
16 the Dodd A is 40.1395 percent.

17 Q. Where are you at, Mr. Miller?

18 A. I'm on Exhibit C of the unit operating agreement.
19 That's Exhibit Number 4.

20 Q. Unit agreement, not unit operating agreement.
21 Unit agreement.

22 A. I'm sorry.

23 Q. Unit agreement.

24 A. Last page, bottom right-hand side, tract
25 participation, Dodd A 40.1395 percent --

1 Q. Okay.

2 A. -- Pinon Federal 14.3287 percent, Dodd B 38.9743.
3 The Tom Boyd Dodd, or Boyd Dodd Federal, is 3.9769 percent.
4 And the Raper is 2.5806 percent.

5 Q. Okay. And you do have -- all the numbers that
6 those are based on are shown up at the top there?

7 A. Yes, those are the factors, and the calculations
8 that were made, and this document was part of the
9 information provided to everyone.

10 Q. Okay. I believe that you gave me numbers,
11 voluntarily committed for each tract. Do you have a
12 number, a total number, for the whole unit of working
13 interests that are voluntary committed at this point?

14 A. I didn't make that calculation, I did tract by
15 tract. Obviously, I was not trying to distort, you know,
16 and make it appear that 90-some-odd percent are actually
17 committed.

18 But obviously in the fact that we own such a
19 large interest, I was particularly identifying by tract
20 because of the fact that the one tract we have virtually no
21 interest in.

22 Q. Okay, I need --

23 MR. CARR: Would you like those numbers?

24 EXAMINER CATANACH: Yes, yes.

25 Q. (By Examiner Catanach) But at this point do you

1 believe that you have more than 75 percent of the working
2 interest and the royalty interest?

3 A. Oh, yes.

4 EXAMINER CATANACH: Okay. But I do need those
5 numbers, Mr. Carr, if you can give them to me.

6 MR. CARR: We'll provide them.

7 Q. (By Examiner Catanach) Now, the waterflood
8 operations that are ongoing, those were approved by
9 previous orders you've shown. Were those basically for
10 Grayburg-Jackson?

11 A. The actual floods that have been done in the past
12 are primarily the Keely horizon and the San Andres and what
13 is locally known as the Metex horizon in the Grayburg.

14 Our current flood intervals that are actually in
15 the active injection well currently are either -- a few of
16 them are open-hole, the majority of them are perforated
17 intervals, and the intervals range from 2387 to 2475 or
18 2478, perforated depth.

19 In the wells -- the open-hole have slightly
20 larger intervals, but those intervals actually are the
21 Metex interval and the -- or what is known as the Metex
22 interval in the Grayburg formation.

23 So currently the waterflood operation is targeted
24 in the Metex interval in the northern part.

25 Q. Okay. Your plan within the unit is to expand the

1 injection interval to include some of the other formations?

2 A. We have actually seen companies who have adopted
3 what I call the shotgun approach to waterflooding, whereby
4 they go in and ask for approval to perforate multiple
5 horizons and just inject into all of them.

6 We maybe are old-school, maybe I'm just not smart
7 enough to know how to do it right, but we actually believe
8 that for best results we should actually try to target the
9 specific interval that we're trying to flood and to try to
10 contain the flood inside that for the best ultimate
11 recovery.

12 As a result, what we plan on looking at inside
13 this unit is, we want to set up some pilots into various
14 horizons, identify which horizons we think are potentially
15 floodable and actually set up some pilots in those
16 particular horizons, try to see if we can actually get
17 positive response in the pilots, and then come forward with
18 applications for secondary recovery in those horizons.

19 But we actually -- and that's why I say, quite
20 honestly, Loco Hills has been good to us, we believe that
21 there is tremendous additional drilling that needs to be
22 done, and we believe that there will be multiple horizons
23 that have careful secondary recovery, and those recovery
24 projects will take years to actually achieve before we
25 should then move up in those same wellbores to the next

1 interval.

2 And as a result -- I don't know until we actually
3 do some of those pilots, but I know the way that we're
4 actually developing our deep gas wells is, we start at the
5 bottom and work up. It seems to be more cost-effective,
6 and unless we're in a competitive-drainage situation, we're
7 planning on staying in business, despite the rumors in
8 Midland, Texas, for a long time and plan on being here
9 until I retire or die.

10 Q. Okay. Within the next two or three years do you
11 plan on drilling any additional injection wells?

12 A. Yes. Well, we'll either drill new injection
13 wells or we will convert the existing wells, but obviously
14 the injection wells that are currently injection, many of
15 those are only drilled to that depth.

16 And so to actually test deeper horizons, we will
17 either have to drill new wells or identify deep wells that
18 have casing-cemented integrity that would then be eligible
19 for conversion into injection.

20 But yes, there will either be new wells -- or
21 there will be new wells drilled, as well as some of the
22 existing wells proposed for conversion.

23 Q. And as I understand it, you would -- say for
24 example in the Yeso, you would drill and test a pilot area
25 to see if you would have any success in flooding that zone?

1 A. Right, that's what we anticipate. We anticipate
2 actually looking at -- over the next few years, by the
3 floods, probably in the Yeso, the Keely, the Jackson, the
4 Loco Hills, as well as some additional well drilling in the
5 Metex to see -- My engineer, when he finally actually
6 looked at what we were doing up there, he says, We should
7 have drilled some more wells in here. We got injection
8 wells with virtually no producers.

9 And I says, Well, let's get it unitized and then
10 we'll go drill some wells. You know, so...

11 But anyway, we have lots of opportunity there.

12 Q. Well, not knowing whether or not a zone is going
13 to be productive -- Well, do you attribute secondary
14 reserves to some of these zones that you don't know? I
15 mean, is that a factor?

16 A. We actually believe that the zones will probably
17 be productive across the entire unit. In other words, we
18 have no reason to believe that even though the northern end
19 has not been developed, that there are not reserves both in
20 the Grayburg, San Andres and Yeso on that northern section.

21 Now, obviously the reason they haven't been
22 drilled is because as Sun and as we drilled to the north,
23 the reserves became less, the initial production rates and
24 the ultimate for those wells were less than the wells to
25 the south.

1 Given the price scenario that we're working at --
2 and we believe, you know, our development of this unit will
3 be ultimately -- we believe we'll actually have wells on
4 every 40-acre tract, and I hate for the BLM to find out,
5 but probably two to three wells on every 40-acre tract, and
6 be doing secondary recovery over time in multiple different
7 horizons.

8 Q. You've estimated that as a result of unit
9 operations you're going to recover an additional 13.7
10 million barrels; is that correct?

11 A. He actually has -- barrels of oil, he actually
12 has BOE, which includes the casinghead gas, of unit
13 operations being 19.579 million barrels of BOE equivalent.

14 Now, like I say, I'm an accountant, I'm pretty
15 conservative. I didn't get an engineering degree, so I
16 think that may be a little on the high side, but he's
17 smarter than I am. He's older too.

18 Q. With regards to the request for unorthodox
19 locations, that worked well on Burch-Keely where you just
20 had to submit drilling permits to the Hobbs -- or Artesia
21 Office?

22 A. Worked very well. We wind up, obviously -- we
23 stay within the setback of 330 from the outside of the
24 unit, but it winds up giving us the ability to go in
25 largely to the corners and even into the lines in the

1 middle where we were actually -- we developed the spacing
2 kind of on a 20-acre spacing, but because of existing wells
3 already being drilled, we started doing the 20-acre spacing
4 development of about 933 feet away from each well at all
5 unorthodox locations, and it's actually worked quite well
6 with us not having to submit requests for each one to Santa
7 Fe and notices and stuff.

8 And what the Artesia OCD does is, they obviously
9 have been provided with the order, and then they just check
10 to make sure that we're complying. And I believe once or
11 twice we actually filed one closer than the 25 feet, we put
12 it right on the line. And they go, Hey guys, you're
13 supposed to stay a little bit off of the line.

14 But no, it's worked extremely well, and I mean I
15 believe the BLM and OCD both would look back on that as a
16 very successful unit.

17 MR. CARR: Mr. Catanach, that was a separate
18 hearing that followed the statutory unitization in Burch-
19 Keely. I don't have the order number with me, but I can
20 provide it. It was entered in Case 10,904.

21 EXAMINER CATANACH: I can find it easy enough.

22 MR. CARR: Okay. And it was heard in January of
23 1994.

24 EXAMINER CATANACH: Mr. Carr, do you recall in
25 that -- in the Burch-Keely Unit, was there also a case put

1 forward at that time to extend the pool vertical limits?

2 MR. CARR: I don't recall that we did that at
3 that time.

4 THE WITNESS: I believe there is a case there
5 that probably extended the Grayburg-Jackson Pool to include
6 the 500 feet or the unitized interval into it. I believe
7 -- seems like there was actually three different hearings.

8 EXAMINER CATANACH: Uh-huh.

9 THE WITNESS: My mom has Alzheimer's, and I've
10 got a little bit of dementia, but I remember we -- Well, in
11 fact, we had many meetings with Director LeMay over that
12 unit, because he was very concerned about possible cross-
13 flows in the zones. And I believe we met with you and
14 Morrow and LeMay on different occasions, trying to gently
15 persuade Bill that it would actually be a good thing.

16 The only thing I can say is, it turned out to be
17 a good thing, so... And we don't believe there is any
18 cross-flow issue with our current operations.

19 MR. CARR: And I've looked at the unitization
20 case, and I've looked at the Burch-Keely unorthodox-
21 location case, and my recollection is that the case to
22 expand the interval would have been at the same time as the
23 case on the unorthodox locations.

24 THE WITNESS: It may be.

25 EXAMINER CATANACH: Okay, if you can find

1 anything about that --

2 MR. CARR: I think it was a companion case, I
3 think it would be one number off, maybe 10,905, but I'll
4 check and provide both of those for you.

5 EXAMINER CATANACH: I'm not sure that it wouldn't
6 be a good idea to do the same thing in this unit.

7 I think that's all I have. I may have more
8 questions as I get further into this, and I may ask you for
9 some additional information after we take the hearing under
10 consideration, but that's all I have for now. Do you have
11 anything further, Mr. Carr?

12 MR. CARR: That concludes our presentation in
13 this matter.

14 EXAMINER CATANACH: Okay, there being nothing
15 further, Case 13,349 and 13,350 will be taken under
16 advisement.

17 THE WITNESS: I apologize for being so windy to
18 the rest of the folks, but -- shouldn't let me go first.

19 EXAMINER CATANACH: Let's take a 15-minute break.

20 (Thereupon, these proceedings were concluded at
21 9:45 a.m.)

22 * * * I do hereby certify that the foregoing is
23 a complete record of the proceedings in
24 the Examiner hearing of Case No. 3349/1330
25 heard by me on October 7, 2007
David R. Catnach, Examiner
Oil Conservation Division

CERTIFICATE OF REPORTER

STATE OF NEW MEXICO)
) ss.
 COUNTY OF SANTA FE)

I, Steven T. Brenner, Certified Court Reporter and Notary Public, HEREBY CERTIFY that the foregoing transcript of proceedings before the Oil Conservation Division was reported by me; that I transcribed my notes; and that the foregoing is a true and accurate record of the proceedings.

I FURTHER CERTIFY that I am not a relative or employee of any of the parties or attorneys involved in this matter and that I have no personal interest in the final disposition of this matter.

WITNESS MY HAND AND SEAL October 9th, 2004.



STEVEN T. BRENNER
 CCR No. 7

My commission expires: October 16th, 2006